

CLAIMS

1. A locking system comprising an IC tag for locking operation, an IC tag monitoring device that makes communication with the IC tag for locking operation, and a locking device that locks and unlocks a device based on a result of monitoring made by the IC tag monitoring device, wherein said IC tag for locking operation stores identification data that is used for distinguishing the IC tag from other IC tags, wherein said IC tag monitoring device includes first transmission means for transmitting a calling wave for calling said IC tag for locking operation, first reception means for receiving a reflected wave returned from said IC tag for locking operation, an antenna for key that is connected to said first transmission means and said first reception means, key determination means for determining as being normal if said first reception means receives a reflected wave containing identification data identical to registered data that is registered beforehand within a specified period of time since said first transmission means transmits a calling wave, and first output means for outputting the result of key determination made by the key determination means to the outside, and wherein said locking device comprises a key including said IC tag for locking operation and a lock that includes said antenna for key and into which said key is to be inserted.

2. A locking system according to claim 1, wherein said locking device comprises second reception means for receiving said result of key determination outputted from said first output means, and unlocking

means for unlocking operation if said result of key determination received by said second reception means is normal.

3. A locking system according to claim 1 or 2, wherein said first output means outputs said result of key determination or key monitoring history data, said key monitoring history data comprising at least one of the key insertion time that is the time at which the communication unavailable state in which said first reception means cannot receive said reflected wave has changed into the communication available state in which said first reception means can receive said reflected wave and identification data contained in the received reflected wave, the key withdrawal time that is the time at which said communication available state has changed into said communication unavailable state, and the key ID abnormal time that is the time at which identification data different from the registered data that is registered beforehand is received and identification data contained in the received reflected wave.

4. A locking system according to any one of claims 1 to 3, comprising an IC tag for monitoring opening/closing operation that stores identification data for identifying said tag from other IC tags and that is provided to an opening/closing member for opening and closing the device or to a device main body in the vicinity of the opening/closing member, wherein said IC tag monitoring device comprises second transmission means for transmitting a calling wave for calling said IC tag for monitoring opening/closing operation, third reception means for receiving a reflected wave returned from said IC tag for monitoring opening/closing operation, an antenna for monitoring connected to said

second transmission means and said third reception means, opening/closing operation determination means for determining as being normal if said third reception means receives a reflected wave containing identification data identical to registered data that is registered beforehand within a specified period of time since said second transmission means transmits a calling wave, and second output means for outputting history data of monitoring opening/closing operation containing result of opening/closing operation determination by the opening/closing operation determination means to the outside.

5. A locking system according to claim 4, wherein said IC tag monitoring device comprises annunciation means for making an annunciation if both of said result of key determination and said result of opening/closing operation determination are abnormal.

6. A locking system according to claim 4 or 5, wherein said antenna for monitoring is provided to a device main body in the vicinity of said IC tag for monitoring opening/closing operation if said IC tag is provided to said opening/closing member, and is provided to said opening/closing member in the vicinity of the IC tag for monitoring opening/closing operation if said IC tag is provided to said device main body, wherein said antenna for monitoring and said IC tag for monitoring opening/closing operation can make communication with each other if said opening/closing member is in a closed state, and cannot make communication with each other if said opening/closing member is in an opened state.

7. A locking system according to any one of claims 4 to 6, wherein said history data of monitoring opening/closing operation

comprises at least one of the time of disappearance that is the point of time at which the communication available state in which said third reception means can receive said reflected wave has changed into the communication unavailable state in which said third reception means cannot receive said reflected wave, the time of recovery that is the point of time at which said communication unavailable state has changed into said communication available state, and the time of ID abnormality that is the point of time at which identification data different from the registered data that has been registered beforehand has received.

8. A locking system comprising an IC tag for locking operation, an IC tag for monitoring opening/closing operation, an IC tag monitoring device that makes communication with said IC tag for locking operation and said IC tag for monitoring opening/closing operation, and a locking device that locks and unlocks a device based on a result of monitoring made by the IC tag monitoring device, wherein said IC tag for locking operation stores identification data that is used for distinguishing the IC tag from other IC tags, wherein said IC tag for monitoring opening/closing operation stores identification data that is used for distinguishing the IC tag from other IC tags, and is provided to an opening/closing member that is opened and closed from the device or to a device main body in the vicinity of the opening/closing member, wherein said IC tag monitoring device includes transmission means for transmitting a calling wave for calling said IC tag for locking operation or said IC tag for monitoring opening/closing operation, reception means for receiving a reflected wave returned from said IC tag for locking operation or said IC tag for monitoring opening/closing operation, an

antenna that is connected to said transmission means and said reception means, determination means for determining as being abnormal if said reception means does not receive a reflected wave containing identification data identical to registered data that is registered beforehand within a specified period of time since said transmission means transmits a calling wave to the IC tag for monitoring opening/closing operation and if said reception means does not receive a reflected wave containing identification data identical to registered data that is registered beforehand within a specified period of time since said transmission means transmits a calling wave to said IC tag for locking operation, and output means for outputting the result of determination made by said determination means to the outside, and wherein said locking device comprises a key including said IC tag for locking operation and a lock that includes said antenna and into which said key is to be inserted.

9. A game machine comprising a locking system according to any one of claims 1 to 8.

10. A device management system in which a device that includes the locking system according to any one of claims 1 to 7 is connected with a management machine that manages the device via a network, wherein said management machine comprises monitoring history data reception means for receiving said result of key determination that is outputted from said first output means or said key monitoring history data, or for receiving said history data of monitoring opening/closing operation outputted from said second output means.

11. A device management system according to claim 10, wherein said management machine comprises monitoring history data storage means for storing said result of key determination or said key monitoring history data that said monitoring history data reception means has received or for storing said history data of monitoring opening/closing operation.

12. A device management system according to claim 10 or 11, wherein said management machine comprises monitoring history data output means for outputting said result of key determination or said key monitoring history data that said monitoring history data reception means has received or for outputting said history data of monitoring opening/closing operation.